

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A single multifunctional rotary tool bit for a drilling and surgical cutting system adapted for preparing an osteotomy in a bone, comprising:

a) a longitudinal, rotatable shaft having a proximal end and a distal end;

b) a mounting shank disposed at said proximal end of said longitudinal, rotatable shaft for interfacing with a handpiece of an osteotomy cutting and drilling system;

c) a cutting and drilling blade having a proximal end and distal end, disposed at said distal end of said longitudinal rotatable shaft, said cutting and drilling blade including a plurality of cutting edges and surfaces for cutting and drilling bone and tissue material; ~~and~~

d) an osteotomy locator tip having dual lobes disposed in a common plane, formed at said distal end of said cutting and drilling blade, to locate an osseous implant site and prevent wandering and slipping of said tip; and

e) said tool bit comprising a single instrument comprising the functions of a crestal bone height reducer, an osteotomy locator, an osteotomy lateral redirector, and an osteotomy drill.

Claim 2 (original): The tool bit in accordance with claim 1, wherein the first portion of said distal end of said cutting and drilling blade immediately after said osteotomy locator tip comprises a redirectable tip permitting the avoidance of vital features in the jawbone by the lateral movement of said redirectable tip.

Claim 3 (original): The tool bit in accordance with claim 2, wherein said redirectable tip is approximately 2.0 mm in length.

Claim 4 (original): The tool bit in accordance with claim 2, wherein said cutting and drilling blade has multifaceted cutting edges for creating a crestal bone height reducer.

Claim 5 (original): The tool bit in accordance with claim 4, wherein said proximal end of said cutting and drilling blade comprises a tapered countersink.

Claim 6 (original): The tool bit in accordance with claim 5, wherein the last portion of said proximal end of said cutting and drilling blade immediately after said tapered countersink further comprises a gross osseous crestal bone height reducer.

Claim 7 (original): The tool bit in accordance with claim 6, further comprising an osteocompressor operatively connected to said gross osseous crestal bone height reducer.

Claim 8 (original): The tool bit in accordance with claim 7, wherein said cutting and drilling blade is coated with material to reduce the coefficient of friction, improve drilling and cutting performance, improve wear and corrosion resistance, and increase the thermal conductivity of said cutting and drilling blade.

Claim 9 (original): The tool bit in accordance with claim 8, wherein said cutting and drilling blade coating material is selected from a group consisting of: a diamond-like carbon coating, a ceramic coating, a tungsten carbide coating, a titanium nitride coating, an aluminum titanium nitride coating, a tungsten disulfide coating, a diamond dust particulate coating, and a combination of said enumerated materials.

Claim 10 (original): The tool bit in accordance with claim 7, further comprising a linking member operatively connecting said gross crestal bone height reducer and said mounting shank.

Claim 11 (original): The tool bit in accordance with claim 10, wherein said linking member is coated with a material to reduce the coefficient of friction, and improve wear and corrosion resistance of said linking member.

Claim 12 (original): The tool bit in accordance with claim 11, wherein said linking member coating material is selected from a group consisting of: a diamond-like carbon coating, a ceramic coating, a tungsten carbide coating, a titanium nitride coating, an aluminum titanium nitride coating, a tungsten disulfide coating, a diamond dust particulate coating, and a combination of said enumerated materials.

Claim 13 (original): The tool bit in accordance with claim 10, wherein said mounting shank includes a chuck comprising a generally I-shaped flat side and a generally semicircular disk above and adjacent to a generally semicircular groove.

Claim 14 (original): The tool bit in accordance with claim 13, in combination with a rotation providing handpiece to form a dental drilling and cutting system.

Claim 15 (currently amended): A single multifunctional rotary tool bit for a dental drilling and cutting system adapted for preparing an osteotomy in jawbone, comprising:

a) a longitudinal, rotatable shaft having a proximal end and a distal end;

b) a mounting shank disposed at said proximal end of said longitudinal, rotatable shaft for interfacing with a handpiece of an osteotomy cutting and drilling system;

c) a cutting and drilling blade having a proximal end and distal end, disposed at said distal end of said longitudinal rotatable shaft, said cutting and drilling blade including a plurality of cutting edges and surfaces for cutting and drilling bone and tissue material; and

d) an osteotomy locator tip having dual lobes disposed in a common plane, formed at said distal end of said cutting and drilling blade, to locate an osseous implant site and prevent wandering and slipping of said tip.

Claim 16 (original): The tool bit in accordance with claim 15, wherein the first portion of said distal end of said cutting and drilling blade immediately after said osteotomy locator tip comprises a redirectable tip permitting the avoidance of vital features in the jawbone by the lateral movement of said redirectable tip.

Claim 17 (original): The tool bit in accordance with claim 16, wherein said redirectable tip is approximately 2.0 mm in length.

Claim 18 (original): The tool bit in accordance with claim 17, wherein said cutting and drilling blade has multifaceted cutting edges for creating a crestal bone height reducer.

Application. No. 10/688,805
Amendment dated May 4, 2006
Reply to Office Action of February 7, 2006

Claim 19 (original): The tool bit in accordance with claim 18, wherein said proximal end of said cutting and drilling blade comprises a tapered countersink.

Claim 20 (original): The tool bit in accordance with claim 19, wherein the last portion of said proximal end of said cutting and drilling blade immediately after said tapered countersink further comprises a gross osseous crestal bone height reducer.

Claim 21 (original): The tool bit in accordance with claim 20, further comprising an osteocompressor osteotome operatively connected to said gross crestal bone height reducer.

Claim 22 (original): The tool bit in accordance with claim 21, wherein said cutting and drilling blade is coated with material to reduce the coefficient of friction, improve drilling and cutting performance, improve wear and corrosion resistance, and increase the thermal conductivity of said cutting and drilling blade.

Claim 23 (original): The tool bit in accordance with claim 22, wherein said cutting and drilling blade coating material is selected from a group consisting of: a diamond-like carbon coating, a ceramic coating, a tungsten carbide coating, a titanium nitride coating, an aluminum titanium nitride coating, a tungsten disulfide coating, a diamond dust particulate coating, and a combination of said enumerated materials.

Claim 24 (original): The tool bit in accordance with claim 20, further comprising a linking member operatively connecting said gross crestal bone height reducer and said mounting shank.

Claim 25 (original): The tool bit in accordance with claim 24, wherein said linking member is coated with a material to reduce the coefficient of friction, and improve wear and corrosion resistance of said linking member.

Application. No. 10/688,805
Amendment dated May 4, 2006
Reply to Office Action of February 7, 2006

Claim 26 (original): The tool bit in accordance with claim 25, wherein said linking member coating material is selected from a group consisting of a diamond-like carbon coating, a ceramic coating, a tungsten carbide coating, a titanium nitride coating, an aluminum titanium nitride coating, a tungsten disulfide coating, a diamond dust particulate coating, and a combination of these enumerated materials.

Claim 27 (original): The tool bit in accordance with claim 24, wherein said mounting shank includes a chuck comprising a generally I-shaped flat side and a generally semicircular disk above and adjacent to a generally semicircular groove.

Claim 28 (original): The tool bit in accordance with claim 27, in combination with a rotation providing handpiece to form a dental drilling and cutting system.

Claim 29 (original): A method for drilling and cutting to prepare an osteotomy in a jawbone, comprising the steps of:

a) using a cutting and drilling blade with a osteotomy locator tip of a multifunctional dental surgical tool to precisely locate an osseous implant site and prevent wandering and slipping of said tip to perform crestal bone marking;

b) using a redirectable tip of said cutting and drilling blade to avoid bone and tissue anatomical vital sites in a patient's jawbone;

c) using a crestal bone height reducer operatively formed from said cutting and drilling blade, to create a leveled implant osseous platform by moving said cutting and drilling blade in a buccal-lingual, nonlinear motion;

d) using said crestal bone height reducer to harvest bony particulate material;

e) using a tapered countersink of said multifunctional dental surgical tool to create a counterbore in cortical bone of said jawbone;

f) using a gross osseous crestal bone height reducer of said multifunctional dental surgical tool to harvest bony particulate materials;

g) using an osteocompressor operatively connected to said gross osseous crestal bone height reducer to compress the osseous site, completing the preparation of said osteotomy in said jawbone; and

h) using a synthetic bone graft material mixed with said bony particulate material to reconstruct bone structures.